2016 360 Y-DROP™ Technical Guide

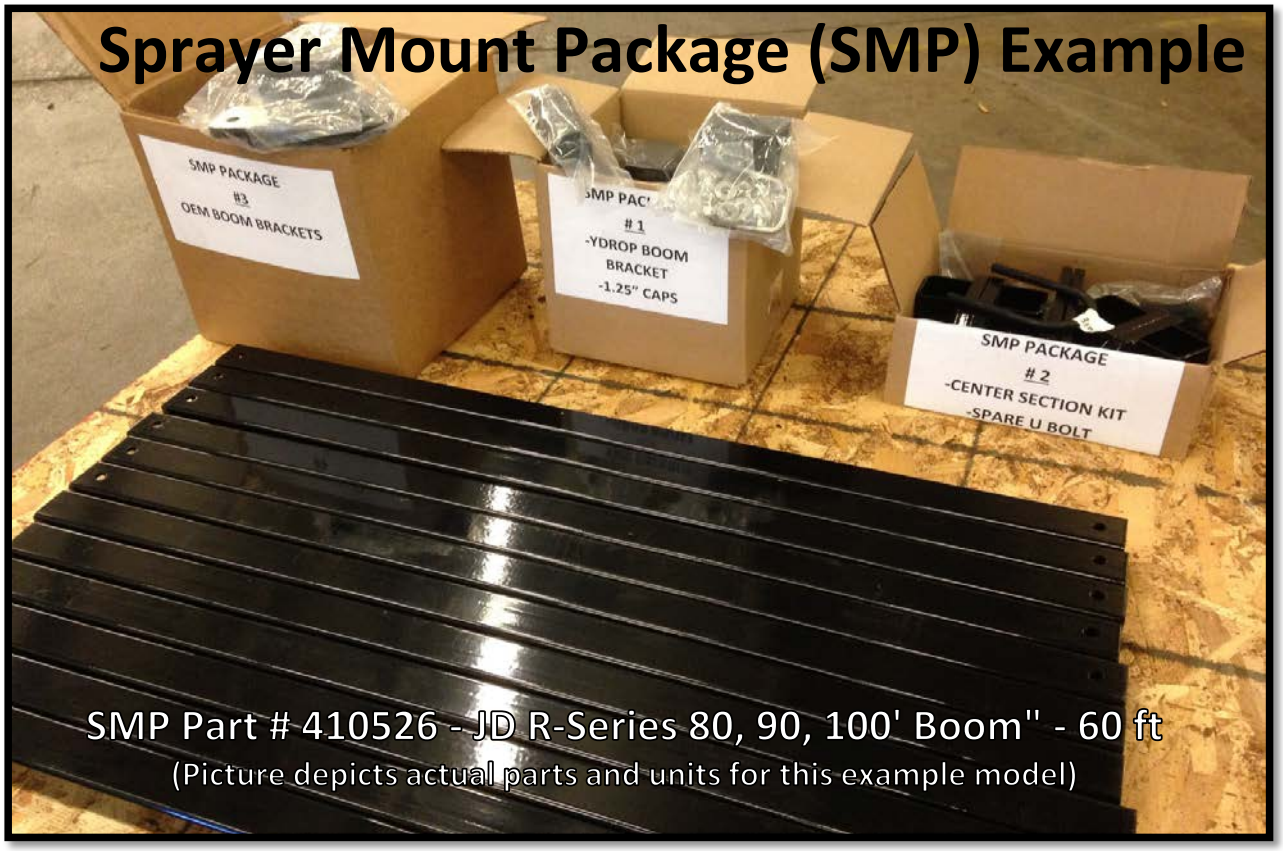
Issued March 4, 2016

360 Y-DROP™ Ordering Steps
These steps are intended to follow the steps in the Order & Retail Price Guide. This guide will provide the technical detail in having a successful 360 Y-DROP™ order placed with 360 Yield Center and should be used in conjunction with the 360 Y-DROP™ price guide.

Order a 360 Y-DROP™ System

STEP 1 - Sprayer Mount Package (SMP)

- **The Sprayer Mount Package (SMP) is a pre-packaged set of parts sold by 360 Yield Center to attach the Y-DROP boom assembly to the sprayer manufacturer's boom. The SMP includes boom mounting brackets, top bracket plates, extension brackets, connectors, and any other hardware to complete an install. Every SMP has differing brackets, hardware, and kits as well as the correct number of such parts. 360 Yield Center will ensure your ordered package includes all parts necessary for a successful mount.**



- **Appendix A** (of the Technical guide) provides charts to be used in determining the correct system boom length. Simply find your model, # of rows, and row width (while considering the 1st fold boom size) which will provide you the correct boom length to find your OEM sprayer.
- Find the resulting system boom length in the Price Guide Sprayer Mount Package listing with applicable part number - all hardware and mounting part quantities are all included in a single SMP.
- Reminder: 360 Y-DROP™ Systems Can ONLY be Mounted on the 1st fold of any self-propelled sprayer.

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STEP 2 - Boom Assemblies

- **The 360 Y-DROP™ System's boom assembly comes in 5 foot sections that connect together with 8" connectors and hardware. The boom assembly provides a consistent boom for the attachment of the riser mounts. It takes several boom assemblies to fit the entire length of the OEM sprayer boom as noted below.**

- Quantity Needed: (calculated boom length in feet / 5) + 1
  Exception: 66' systems = (calculated boom length in feet / 5) + 2
  Ex: Sprayer Mount Pkg - JD R-Series 80, 90, 100' - 60 ft or (60' / 5) + 1 = 13 boom assemblies
- Part number 415000 includes a single 5 foot boom section along with a connector and hardware.

STEP 3 - Riser Mount Assemblies

- **The Riser Mount Assembly is the connector that attaches the Riser Tube to the system's Boom Assembly.**

- Quantity Needed: # of drops
  Ex: Sprayer Mount Pkg - JD R-Series 80, 90, 100' - 60 ft or 24 row system = 23 riser mounts.
- Part number 416000 includes connector and hardware.

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STEP 4 - Riser Mount Assemblies for Transport

- **Needed for placement of Y-drops (risers and base units) on the boom for reduced interference during transportation.**
- Quantity Needed: see chart below and refer to Appendix A for Calculated Boom Ft.
- Part number 416000 includes connector and hardware.

Calculated Boom Ft.	Recommended Qty
30-44 ft	none
51 ft	4
59 ft and greater	6

STEP 5 - Breakaway Assemblies

- **Breakaway assembly provides the linkage between the riser mount and the riser tube that will allow for the entire YDROP unit to breakaway in those cases where the YDROP base unit will come into contact with the ground. This will allow for reduced stress on the Sprayer Mount Package and booms.**
- Quantity Needed: # of drops

  Ex: Sprayer Mount Pkg - JD R-Series 80, 90, 100' - 60 ft or 24 row system = 23 breakaway assemblies

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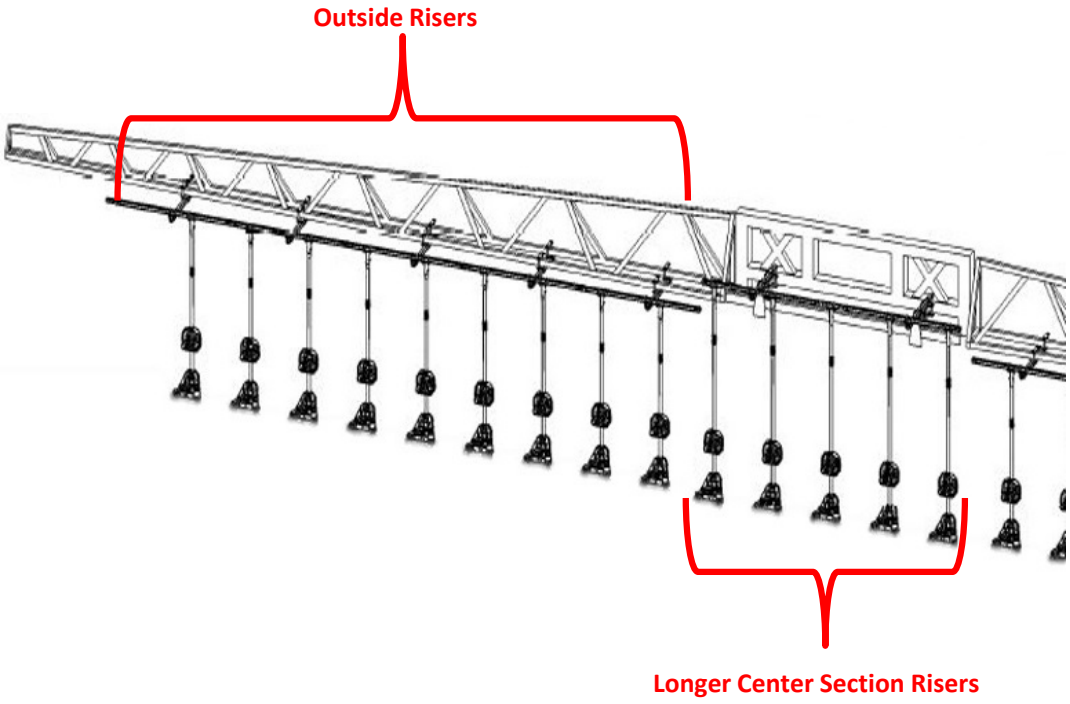
STEP 6 - Riser Tubes

- **The Riser Tube is the long steel tube that attaches the 360 Y-DROP™ Base Unit to the system's Boom Assembly via the Riser Mount.**

- Quantity Needed: # of drops
  Ex: Sprayer Mount Pkg - JD R-Series 80, 90, 100' - 60 ft or 24 row system = 23 riser tubes
- Note: Some sprayer models sit higher in the center rows, requiring longer risers. It may be necessary to make a visual identification of the sprayer center to determine potential variability in riser sizes on the center section of the sprayer versus the outer boom heights. Refer to the chart on the next page for recommended riser lengths by sprayer model. See picture below:



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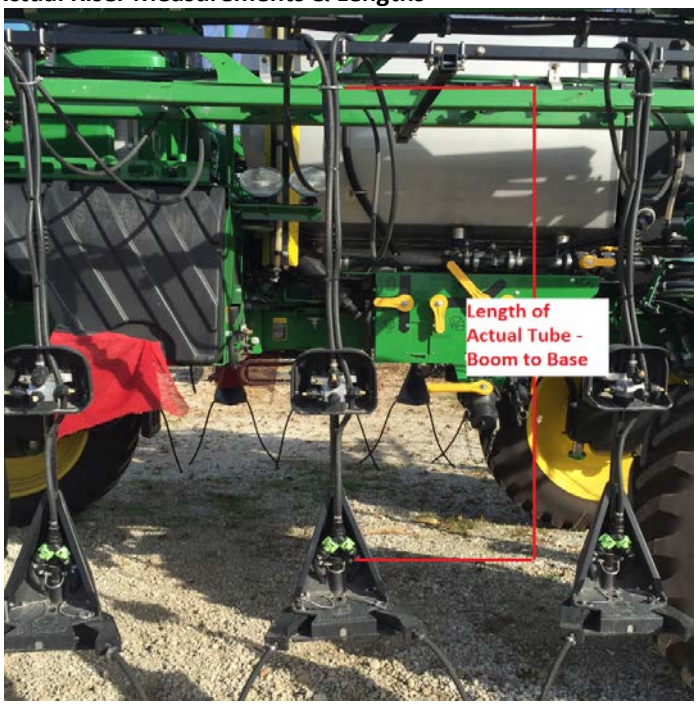
- The Riser length is now measured from the boom to the top of the 360 Y-DROP™ base unit. This is a more intuitive measurement of the actual riser rod itself. See illustration below for actual riser measurements and lengths.

Actual Riser Measurements & Lengths



- See charts below for old and new part numbers corresponding with Riser length, and recommended riser lengths by OEM Maker.

Comparison of Old and New Riser Part Numbers			
Old Part #	Old Stated Riser Length	New Part #	"New" Riser Length
416124	24 Inch	416043	43 Inch
n/a	n/a	416049	49 Inch
416136	36 Inch	416055	55 Inch
n/a	n/a	416061	61 Inch
416148	48 Inch	416067	67 Inch
416160	60 Inch	416079	79 Inch
416172	72 Inch	416091	91 Inch

** - requires 6" extensions (# 416107) for center drops

Recommended Riser Tubes		
	Outside	Center
Apache	49"	49"
Rogator	49"	49"
Case	49"	49"
JD-R Series	55"	67"
JD - 4830/4730/4720	67"	55"
JD - 4930/4940	55"	49"
JD - 4710	55"	67"
JD - 4630	49"	49"
Hagie DTS 2016+	67"	67"
Hagie DTS pre-2016	61"	61"
Hagie STS & Aluminum	67"	67""
Miller-pre 08	67"	67"
Miller-2008+ **	67"	79" + 6" ext

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STEP 7 - Riser Hose Assemblies

- **The Riser Hose Assembly is the hose that liquid flows through from the OEM Sprayer lines to the 360 Y-DROP™ Base Units.**

- Quantity Needed: # of drops

  Ex: Sprayer Mount Pkg - JD R-Series 80, 90, 100' - 60 ft or 24 row system = 23 riser hose assemblies
- See chart below for the Riser Hoses corresponding with the Riser Tubes.

Riser Tube	Riser Hose Needed	Part Number
43" or 49"	90"	416090
55"	102"	416099
61" or 67"	114"	416110
79" or 91"	126"	416111

- Each part number includes a single hose with required connectors.
- For Case AIM systems, order adapters (416005) for the hose connection to the nozzle body. One adapter is needed for each hose.

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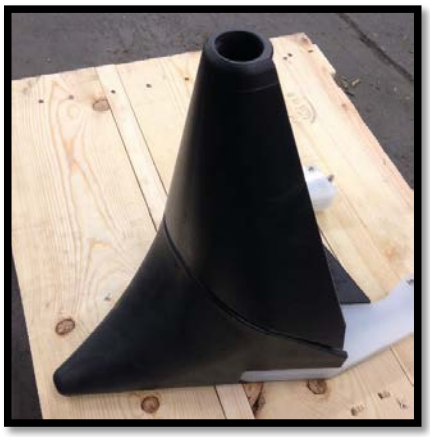
Order a 360 Y-DROP™ System

STEP 8 - 360 Y-DROP™ Base Unit

- **The 360 Y-DROP™ Base Unit is the molded part at the bottom of the Riser Tube which runs through the field.**



- Quantity Needed: INSIDE ROWS: Conventional (Black): # of drops - 2
  Quantity Needed: OUTSIDE ROWS: High Visibility (Orange): 2
  Ex: Sprayer Mount Pkg - JD R-Series 80, 90, 100' - 60 ft or 24 row system = 23 drops.
  24 row system = 21 360 Y-DROP™ Conventional Base Units
  + 2 360 Y-DROP™ High Visibility Base Units
  = 23 Total Base Units
- See chart below for the 360 Y-DROP™ Base Unit part numbers.

Part Number	360 Y-DROP™ Base Unit
413000	360 Y-DROP™ Base Unit - Conventional (Black)
413010	360 Y-DROP™ Base Unit - High Visibility (Orange)

- Each part number includes a single 360 Y-DROP™ Base Unit.

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Order a 360 Y-DROP™ System

STEP 9 - Drag Hoses

- **Two Drag Hoses (order singly) attach to each 360 Y-DROP™ Base Unit and precisely apply the liquid nitrogen or other product along the base of the stalk.**

- Quantity Needed: # of drops * 2 hoses per 360 Y-DROP™.
  Ex: Sprayer Mount Pkg - JD R-Series 80, 90, 100' - 60 ft or 24 row system = 23 drops * 2 = 46 drag hoses.
- See chart below for Drag Hoses offered for sale.

Part Number	Drag Hose Length
413124	24 Inch
413130	30 Inch
413136	36 Inch
413148	44 Inch

- Recommendation is that most systems will utilize the 30" hose.
- For Row widths greater than 30" or rough terrain, 36" drag hoses are suggested.
- Each part number includes a single drag hose and hose clamp.

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STEP 10 - Orifices/Nozzles (Optional)

- **Orifices or Nozzles are used in the base unit to control application rates during operation of the 360 Y-DROP™. Two orifices or nozzles are needed for each drop (one for each side or arm of the base unit).**

Single Orifice with Rubber Washer sold as: Orifice Plate and Washer Kit

- Quantity needed: INSIDE ROWS: (# of drops * 2) - 2
  Quantity needed: OUTSIDE ROWS: Two
  Ex: Sprayer Mount Pkg - JD R-Series 80, 90, 100' - 60 ft or 24 row system = 23 drops * 2 = 46 total nozzles.
  24 row system = (23 drops * 2) - 2 = 44 Inside orifices or nozzles
  + 2 Outside orifices or nozzles
  = 46 Total orifices or nozzles
- See Appendix C for orifice selection based on targeted application rates and row spacing.
- See Appendix C or chart below for inside/outside row correlation for orifices. The outside orifice has a larger volume requirement due to outside rows being fed by one drag hose.

Double Rate Correlation Orifice Plate Sizes		
Inside Rows		Outside Rows
48	→	73
57	→	78
61	→	91
73	→	103
78	→	110
91	→	132

- If selecting Variable Rate Nozzles, refer to Appendix B for nozzle selection.
- After deciding on inside nozzle, reference chart below for corresponding outside nozzle. The outside nozzle has a larger volume requirement due to outside rows being fed by one drag house.

INSIDE Nozzle (Select in Appendix B)	OUTSIDE Nozzle (Selection Should Correspond to the Inside Nozzle as Below)
TDVRHB015	TDVRHB03
TDVRHB02	TDVRHB03
TDVRHB03	TDVRHB05

- Each part number includes a single orifice plate and corresponding rubber washer. In the case of variable rate nozzles, each part number includes a single variable rate nozzle.

360 Y-DROP™ Sprayer Mount Packages

Appendix A

Spacing	15	20	22	22	22	28	30	30	30	30	30	30	30	38	38	38	38
Rows	48	36	24	32	36	32	12	16	24	32	30	40	16	24	16	12	32
Calculated Boom Feet	60	60	44	59	66	75	30	40	60	80	38	51	60	76	51	38	80
Y-Drop Boom Category	60	60	40	60	70	70	30	40	60	70	40	60	70	70	60	40	70
JD 4830/4730/4720	410506	410506	410504	410506	N/A	N/A	410503	410504	410506	N/A	410504	410506	N/A	N/A	410506	410504	N/A
JD 4930/4940	410516	410516	410514	410516	410517	410517	410513	410514	410516	410517	410514	410516	410517	410517	410516	410514	410517
JD 4710	410686	410686	410684	410686	N/A	N/A	410683	410684	410686	N/A	410684	410686	N/A	N/A	410686	410684	N/A
JD 4630	410666	410666	410664	410666	410667	N/A	410663	410664	410666	N/A	410664	410666	N/A	N/A	410666	410664	N/A
JD R-Series 80, 90, 100' Boom	410526	410526	410524	410526	410527	N/A	410523	410524	410526	N/A	410524	410526	N/A	N/A	410526	410524	N/A
JD R-Series 120' Booms	410536	410536	410534	410536	410537	410537	410533	410534	410536	410537	410534	410536	410537	410537	410536	410534	410537
Hagie STS Steel 80, 90, 100' Boom (2000-current)	410546	410546	410544	410546	410547	N/A	410543	410544	410546	N/A	410544	410546	N/A	N/A	410546	410544	N/A
Hagie STS 120' Aluminum Boom (2012-current)	410556	410556	410554	410556	410557	410557	410553	410554	410556	410557	410554	410557	410556	410557	410556	410554	410557
Hagie DTS (pre-2016)	N/A	N/A	410654	N/A	N/A	N/A	410653	410654	N/A	N/A	410654	N/A	N/A	N/A	N/A	410654	N/A
Hagie DTS (2016+)	410636	410636	410634	410636	N/A	N/A	410633	410634	410636	N/A	410634	N/A	410636	N/A	410636	410634	N/A
Case IH 120' Boom	410566	410566	410564	410566	410567	N/A	410563	410564	410566	N/A	410564	N/A	410566	N/A	410566	410564	N/A
Case IH 80'-90' Boom	410576	410576	410574	410576	410577	N/A	410573	410574	410576	N/A	410574	N/A	410576	N/A	410576	410574	N/A
Miller Nitro (2008+)	410586	410586	410584	410586	410587	410587	410583	410584	410586	410587	410584	410587	410586	410587	410586	410584	410587
New Holland	410596	410596	410594	410596	410597	410597	410593	410594	410596	410597	410594	410597	410596	410597	410596	410594	410597
Miller Nitro (pre-2008)	410606	410606	410604	410606	410607	410607	410603	410604	410606	410607	410604	410607	410606	410607	410606	410604	410607
ROGATOR 80, 90, 100' Boom	410616	410616	410614	410616	N/A	N/A	410613	410614	410616	N/A	410614	N/A	410616	N/A	410616	410614	N/A
ROGATOR 120' Boom	410626	410626	410624	410626	N/A	N/A	410623	410624	410626	N/A	410624	N/A	410626	N/A	410626	410624	N/A
Apache 80, 90, 100' boom	410646	410646	410644	410646	N/A	N/A	410643	410644	410646	N/A	410644	N/A	410646	N/A	410646	410644	N/A
JD K&S Aluminum	410696	410696	410694	410696	410697	410697	410693	410694	410696	410697	410694	410697	410696	410697	410696	410694	410697

Appendix B

30 Inch Corn **All Recommendations based on Water Specific Gravity**

USE THIS CHART INSIDE NOZZLE SELECTION - 30 INCH CORN

TDVRF 015		Application Rate GPA at MPH Based on 15" Spacing (2 Nozzles Per YDROP)										
Pressure	Flow											
PSI	GPM	5	6	7	8	9	10	11	12	13	14	15
20	0.174	13.8	11.5	9.8	8.6	7.7	6.9	6.3	5.7	5.3	4.9	4.6
30	0.266	21.1	17.6	15.0	13.2	11.7	10.5	9.6	8.8	8.1	7.5	7.0
40	0.350	27.7	23.1	19.8	17.3	15.4	13.9	12.6	11.6	10.7	9.9	9.2
50	0.391	31.0	25.8	22.1	19.4	17.2	15.5	14.1	12.9	11.9	11.1	10.3
60	0.443	35.1	29.2	25.1	21.9	19.5	17.5	15.9	14.6	13.5	12.5	11.7
70	0.483	38.3	31.9	27.3	23.9	21.3	19.1	17.4	15.9	14.7	13.7	12.8
80	0.516	40.9	34.1	29.2	25.5	22.7	20.4	18.6	17.0	15.7	14.6	13.6
90	0.537	42.5	35.4	30.4	26.6	23.6	21.3	19.3	17.7	16.4	15.2	14.2
100	0.566	44.8	37.4	32.0	28.0	24.9	22.4	20.4	18.7	17.2	16.0	14.9
120	0.620	49.1	40.9	35.1	30.7	27.3	24.6	22.3	20.5	18.9	17.5	16.4
140	0.670	53.1	44.2	37.9	33.2	29.5	26.5	24.1	22.1	20.4	19.0	17.7

TDVRF 02		Application Rate GPA at MPH Based on 15" Spacing (2 Nozzles Per YDROP)										
Pressure	Flow											
PSI	GPM	5	6	7	8	9	10	11	12	13	14	15
20	0.251	19.9	16.6	14.2	12.4	11.0	9.9	9.0	8.3	7.6	7.1	6.6
30	0.384	30.4	25.3	21.7	19.0	16.9	15.2	13.8	12.7	11.7	10.9	10.1
40	0.512	40.6	33.8	29.0	25.3	22.5	20.3	18.4	16.9	15.6	14.5	13.5
50	0.575	45.5	38.0	32.5	28.5	25.3	22.8	20.7	19.0	17.5	16.3	15.2
60	0.653	51.7	43.1	36.9	32.3	28.7	25.9	23.5	21.5	19.9	18.5	17.2
70	0.696	55.1	45.9	39.4	34.5	30.6	27.6	25.1	23.0	21.2	19.7	18.4
80	0.744	58.9	49.1	42.1	36.8	32.7	29.5	26.8	24.6	22.7	21.0	19.6
90	0.779	61.7	51.4	44.1	38.6	34.3	30.8	28.0	25.7	23.7	22.0	20.6
100	0.821	65.0	54.2	46.4	40.6	36.1	32.5	29.6	27.1	25.0	23.2	21.7
120	0.900	71.3	59.4	50.9	44.6	39.6	35.6	32.4	29.7	27.4	25.5	23.8
140	0.972	77.0	64.2	55.0	48.1	42.8	38.5	35.0	32.1	29.6	27.5	25.7

TDVRF 03		Application Rate GPA at MPH Based on 15" Spacing (2 Nozzles Per YDROP)										
Pressure	Flow											
PSI	GPM	5	6	7	8	9	10	11	12	13	14	15
20	0.326	25.8	21.5	18.4	16.1	14.3	12.9	11.7	10.8	9.9	9.2	8.6
30	0.492	39.0	32.5	27.8	24.4	21.6	19.5	17.7	16.2	15.0	13.9	13.0
40	0.661	52.4	43.6	37.4	32.7	29.1	26.2	23.8	21.8	20.1	18.7	17.5
50	0.739	58.5	48.8	41.8	36.6	32.5	29.3	26.6	24.4	22.5	20.9	19.5
60	0.825	65.3	54.5	46.7	40.8	36.3	32.7	29.7	27.2	25.1	23.3	21.8
70	0.885	70.1	58.4	50.1	43.8	38.9	35.0	31.9	29.2	27.0	25.0	23.4
80	0.943	74.7	62.2	53.3	46.7	41.5	37.3	33.9	31.1	28.7	26.7	24.9
90	1.000	79.2	66.0	56.6	49.5	44.0	39.6	36.0	33.0	30.5	28.3	26.4
100	1.054	83.5	69.6	59.6	52.2	46.4	41.7	37.9	34.8	32.1	29.8	27.8
120	1.154	91.4	76.2	65.3	57.1	50.8	45.7	41.5	38.1	35.2	32.6	30.5
140	1.247	98.8	82.3	70.5	61.7	54.9	49.4	44.9	41.2	38.0	35.3	32.9

TDVRF 05		Application Rate GPA at MPH Based on 15" Spacing (2 Nozzles Per YDROP)										
Pressure	Flow											
PSI	GPM	5	6	7	8	9	10	11	12	13	14	15
20	0.642	50.8	42.4	36.3	31.8	28.2	25.4	23.1	21.2	19.6	18.2	16.9
30	0.758	60.0	50.0	42.9	37.5	33.4	30.0	27.3	25.0	23.1	21.4	20.0
40	0.930	73.7	61.4	52.6	46.0	40.9	36.8	33.5	30.7	28.3	26.3	24.6
50	1.039	82.3	68.6	58.8	51.4	45.7	41.1	37.4	34.3	31.6	29.4	27.4
60	1.091	86.4	72.0	61.7	54.0	48.0	43.2	39.3	36.0	33.2	30.9	28.8
70	1.269	100.5	83.8	71.8	62.8	55.8	50.3	45.7	41.9	38.7	35.9	33.5
80	1.368	108.3	90.3	77.4	67.7	60.2	54.2	49.2	45.1	41.7	38.7	36.1
90	1.451	114.9	95.8	82.1	71.8	63.8	57.5	52.2	47.9	44.2	41.0	38.3
100	1.530	121.2	101.0	86.6	75.7	67.3	60.6	55.1	50.5	46.6	43.3	40.4
120	1.676	132.7	110.6	94.8	83.0	73.7	66.4	60.3	55.3	51.1	47.4	44.2
140	1.810	143.4	119.5	102.4	89.6	79.6	71.7	65.2	59.7	55.1	51.2	47.8

Most sprayers will allow lower application rates down to 15 PSI.

Appendix B

20 Inch Corn **All Recommendations based on Water Specific Gravity**

USE THIS CHART FOR INSIDE NOZZLE SELECTION - 20 INCH CORN

TDVRF 015		Application Rate GPA at MPH Based on 10" Spacing (2 Nozzles Per YDROP)									
Pressure	Flow										
PSI	GPM	6	7	8	9	10	11	12	13	14	15
20	0.174	17.2	14.8	12.9	11.5	10.3	9.4	8.6	8.0	7.4	6.9
30	0.266	26.3	22.6	19.8	17.6	15.8	14.4	13.2	12.2	11.3	10.5
40	0.350	34.7	29.7	26.0	23.1	20.8	18.9	17.3	16.0	14.9	13.9
50	0.391	38.7	33.2	29.0	25.8	23.2	21.1	19.4	17.9	16.6	15.5
60	0.443	43.9	37.6	32.9	29.2	26.3	23.9	21.9	20.2	18.8	17.5
70	0.483	47.8	41.0	35.9	31.9	28.7	26.1	23.9	22.1	20.5	19.1
80	0.516	51.1	43.8	38.3	34.1	30.7	27.9	25.5	23.6	21.9	20.4
90	0.537	53.2	45.6	39.9	35.4	31.9	29.0	26.6	24.5	22.8	21.3
100	0.566	56.0	48.0	42.0	37.4	33.6	30.6	28.0	25.9	24.0	22.4
120	0.620	61.4	52.6	46.0	40.9	36.8	33.5	30.7	28.3	26.3	24.6
140	0.670	66.3	56.9	49.7	44.2	39.8	36.2	33.2	30.6	28.4	26.5

TDVRF 02		Application Rate GPA at MPH Based on 10" Spacing (2 Nozzles Per YDROP)									
Pressure	Flow										
PSI	GPM	6	7	8	9	10	11	12	13	14	15
20	0.251	24.8	21.3	18.6	16.6	14.9	13.6	12.4	11.5	10.6	9.9
30	0.384	38.0	32.6	28.5	25.3	22.8	20.7	19.0	17.5	16.3	15.2
40	0.512	50.7	43.4	38.0	33.8	30.4	27.6	25.3	23.4	21.7	20.3
50	0.575	56.9	48.8	42.7	38.0	34.2	31.1	28.5	26.3	24.4	22.8
60	0.653	64.6	55.4	48.5	43.1	38.8	35.3	32.3	29.8	27.7	25.9
70	0.696	68.9	59.1	51.7	45.9	41.3	37.6	34.5	31.8	29.5	27.6
80	0.744	73.7	63.1	55.2	49.1	44.2	40.2	36.8	34.0	31.6	29.5
90	0.779	77.1	66.1	57.8	51.4	46.3	42.1	38.6	35.6	33.1	30.8
100	0.821	81.3	69.7	61.0	54.2	48.8	44.3	40.6	37.5	34.8	32.5
120	0.900	89.1	76.4	66.8	59.4	53.5	48.6	44.6	41.1	38.2	35.6
140	0.972	96.2	82.5	72.2	64.2	57.7	52.5	48.1	44.4	41.2	38.5

TDVRF 03		Application Rate GPA at MPH Based on 10" Spacing (2 Nozzles Per YDROP)									
Pressure	Flow										
PSI	GPM	6	7	8	9	10	11	12	13	14	15
20	0.326	32.3	27.7	24.2	21.5	19.4	17.6	16.1	14.9	13.8	12.9
30	0.492	48.7	41.7	36.5	32.5	29.2	26.6	24.4	22.5	20.9	19.5
40	0.661	65.4	56.1	49.1	43.6	39.3	35.7	32.7	30.2	28.0	26.2
50	0.739	73.2	62.7	54.9	48.8	43.9	39.9	36.6	33.8	31.4	29.3
60	0.825	81.7	70.0	61.3	54.5	49.0	44.6	40.8	37.7	35.0	32.7
70	0.885	87.6	75.1	65.7	58.4	52.6	47.8	43.8	40.4	37.5	35.0
80	0.943	93.4	80.0	70.0	62.2	56.0	50.9	46.7	43.1	40.0	37.3
90	1.000	99.0	84.9	74.3	66.0	59.4	54.0	49.5	45.7	42.4	39.6
100	1.054	104.3	89.4	78.3	69.6	62.6	56.9	52.2	48.2	44.7	41.7
120	1.154	114.2	97.9	85.7	76.2	68.5	62.3	57.1	52.7	49.0	45.7
140	1.247	123.5	105.8	92.6	82.3	74.1	67.3	61.7	57.0	52.9	49.4

TDVRF 05		Application Rate GPA at MPH Based on 10" Spacing (2 Nozzles Per YDROP)									
Pressure	Flow										
PSI	GPM	6	7	8	9	10	11	12	13	14	15
20	0.642	63.6	54.5	47.7	42.4	38.1	34.7	31.8	29.3	27.2	25.4
30	0.758	75.0	64.3	56.3	50.0	45.0	40.9	37.5	34.6	32.2	30.0
40	0.930	92.1	78.9	69.1	61.4	55.2	50.2	46.0	42.5	39.5	36.8
50	1.039	102.9	88.2	77.1	68.6	61.7	56.1	51.4	47.5	44.1	41.1
60	1.091	108.0	92.6	81.0	72.0	64.8	58.9	54.0	49.9	46.3	43.2
70	1.269	125.6	107.7	94.2	83.8	75.4	68.5	62.8	58.0	53.8	50.3
80	1.368	135.4	116.1	101.6	90.3	81.3	73.9	67.7	62.5	58.0	54.2
90	1.451	143.6	123.1	107.7	95.8	86.2	78.4	71.8	66.3	61.6	57.5
100	1.530	151.5	129.8	113.6	101.0	90.9	82.6	75.7	69.9	64.9	60.6
120	1.676	165.9	142.2	124.4	110.6	99.6	90.5	83.0	76.6	71.1	66.4
140	1.810	179.2	153.6	134.4	119.5	107.5	97.7	89.6	82.7	76.8	71.7

Most sprayers will allow lower application rates down to 15 PSI.

Appendix B

Spraying Liquids with a Density other than Water

Since all tabulations we have computed are based on spraying water, which weighs 8.34 lbs per USA gallon (1 kilogram per liter) conversion factors must be used when spraying liquids that are heavier or lighter than water. To determine the proper size nozzle for the liquid to be sprayed, first multiply the desired GPM or GPA of liquid by the water rate conversion factor. Then use the new converted GPM or GPA rate to select the proper size nozzle.

Example:
Desired application rate is 20 GPA of 28% N. Determine the correct nozzle size as follows:

GPA (liquid other than water) x Conversion Factor
= GPA

20 GPA (28%) x 1.13
= 22.6 GPA (water)

The applicator should choose a nozzle size that will supply 22.6 GPA of water at the desired pressure.

Weight of Solution	Specific Gravity	Conversion Factor
7.0 lbs/gal.	.84	.92
8.0 lbs/gal.	.96	.88
8.34 lbs/gal.	1.00 - WATER	1.00
9.0 lbs/gal.	1.08	1.04
10.0 lbs/gal.	1.20	1.10
10.65 lbs/gal.	1.28 - 28% nitrogen	1.13
11.0 lbs/gal.	1.32	1.15
12.0 lbs/gal.	1.44	1.20
14.0 lbs/gal.	1.68	1.30

Disk Orifice Rate Guidelines

1. It is assumed that a 360 Y-DROP™ unit is between every row on the system and the 360 Y-DROP units apply a band of nutrients to each side of the plant base.
2. Your specific sprayer's application pressure may not reach the entire range displayed in the orifce flow rate tables. Please be sure to take the capability of the specific sprayer into consideration prior to size selection.
3. When applying solutions other than UAN, application rates may vary due to product weight. Example - Ammonium Thiosulfate or Potassium Thiosulfate (you will need to use the proper conversion factor based on that nutrient).
4. To accommodate the fact that the outermost drag hoses only apply to one side of the row on most 360 Y-DROP systems, the outermost orifice plate will need to have double the capacity in order to apply a full rate to the row. The **Double Rate Correlation Table** below shows which orifice plates will need to be included for the outermost drag hose on each side of the sprayer.

Solution Properties		
Solution	**Density of Solution lbs/gal.**	**Conversion Factor unitless**
UAN (28%)	10.65	1.13
UAN (32%)	11.08	1.15
Water	8.34	1

Double Rate Correlation Orifice Plate Sizes		
Inside rows		**Outside rows**
48	→	73
57	→	78
61	→	91
73	→	103
78	→	110
91	→	132

UAN Constants

- UAN (28%) - Weight per gallon 10.65 lbs @ 28% Nitrogen = **2.98 lbs N per gallon 28%**
- UAN (32%) - Weight per gallon 11.08 lbs @ 32% Nitrogen = **3.55 lbs N per gallon 32%**

EXAMPLE #1: Desire to apply 50 lbs Nitrogen using 32% UAN

$$\frac{\textbf{50}\ \text{(lbs N)}}{\textbf{3.55}\ \text{(lbs. N per gallon UAN 32\%)}} = \textbf{14.08 GPA}$$

- You would need to apply 14.08 GPA of product
- Based on 32% weight per gallon vs. water you MUST apply a conversion factor for accurate application:
  14.08 (based on 32% UAN) × **1.15** (32% Conversion factor) = **16.19 GPA** (this is the GPA you reference in the chart).
- Utilize Rate Charts for Orifices or Variable Rate Nozzles attached - look at speed and rate range on charts based on 16.19 GPA to apply your target rate of 50 lbs N using 32% UAN (make sure to use chart based on your row spacing).

EXAMPLE #2: Desire to apply 50 lbs Nitrogen using 28% UAN

$$\frac{\textbf{50}\ \text{(lbs N)}}{\textbf{2.98}\ \text{(lbs. N per gallon UAN 28\%)}} = \textbf{16.78 GPA}$$

- You would need to apply 16.78 GPA of product
- Based on 28% weight per gallon vs. water you MUST apply a conversion factor for accurate application.
  16.78 (Based on 28% UAN) × **1.13** (28% Conversion factor) = **18.96** GPA (this is the GPA you reference in the chart).
- Utilize Rate Charts for Orifices or Variable Rate Nozzles attached - look at speed and rate range on charts based on 18.96 GPA to apply your target rate of 50 lbs N using 28% UAN (make sure to use chart based on your row spacing).

EXAMPLE #3: Desire to apply 40 GPA using 28% UAN

- Based on 28% weight per gallon vs. water you MUST apply a conversion factor for accurate application.
  40 (GPA 28%) × **1.13** (28% Conversion factor) = **45.2 GPA** (this is the GPA you reference in the chart).
- Utilize Rate Charts for Orifices or Variable Rate Nozzles attached - look at speed and rate range on charts based on 45.2 GPA to apply your target rate of 40 GPA using 28% UAN (make sure to use chart based on your row spacing).

Other Considerations

- For row widths other than 20” or 30” special consideration will need to be made to convert the rate tables into the correct values.
- Charts attached are made based on our recommended application of placing nutrients in a band on each side of the row. If application is only applied in a band on one side of the row, rate table values will need to be multiplied by two.

Disk Orifice Rate Chart: 48

Note: All table values must be converted from GPA(water) to the specific solution GPA flow rate with equations listed on Disk Orifice Plate Guidelines (1st pg of Appendix C)

TABLE A

Press.	Flow	GPA (Water) at MPH based on 10" spacing (20" Rows)																
PSI	GPM	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20
20	0.202	40.0	30.0	24.0	20.0	17.1	15.0	13.3	12.0	10.9	10.0	9.2	8.6	8.0	7.5	7.1	6.7	6.0
30	0.248	49.1	36.8	29.5	24.6	21.0	18.4	16.4	14.7	13.4	12.3	11.3	10.5	9.8	9.2	8.7	8.2	7.4
40	0.286	56.6	42.5	34.0	28.3	24.3	21.2	18.9	17.0	15.4	14.2	13.1	12.1	11.3	10.6	10.0	9.4	8.5
50	0.320	63.4	47.5	38.0	31.7	27.2	23.8	21.1	19.0	17.3	15.8	14.6	13.6	12.7	11.9	11.2	10.6	9.5
60	0.350	69.3	52.0	41.6	34.7	29.7	26.0	23.1	20.8	18.9	17.3	16.0	14.9	13.9	13.0	12.2	11.6	10.4
70	0.372	73.7	55.3	44.2	36.8	31.6	27.6	24.6	22.1	20.1	18.4	17.0	15.8	14.7	13.8	13.0	12.3	11.1
80	0.391	77.3	58.0	46.4	38.7	33.1	29.0	25.8	23.2	21.1	19.3	17.8	16.6	15.5	14.5	13.6	12.9	11.6
90	0.404	79.9	60.0	48.0	40.0	34.3	30.0	26.6	24.0	21.8	20.0	18.4	17.1	16.0	15.0	14.1	13.3	12.0
100	0.412	81.5	61.1	48.9	40.8	34.9	30.6	27.2	24.5	22.2	20.4	18.8	17.5	16.3	15.3	14.4	13.6	12.2

TABLE B

Press.	Flow	GPA (Water) at MPH based on 15" spacing (30" Rows)																
PSI	GPM	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20
20	0.202	26.7	20.0	16.0	13.3	11.4	10.0	8.9	8.0	7.3	6.7	6.2	5.7	5.3	5.0	4.7	4.4	4.0
30	0.248	32.7	24.6	19.6	16.4	14.0	12.3	10.9	9.8	8.9	8.2	7.6	7.0	6.5	6.1	5.8	5.5	4.9
40	0.286	37.8	28.3	22.7	18.9	16.2	14.2	12.6	11.3	10.3	9.4	8.7	8.1	7.6	7.1	6.7	6.3	5.7
50	0.320	42.2	31.7	25.3	21.1	18.1	15.8	14.1	12.7	11.5	10.6	9.7	9.1	8.4	7.9	7.5	7.0	6.3
60	0.350	46.2	34.7	27.7	23.1	19.8	17.3	15.4	13.9	12.6	11.6	10.7	9.9	9.2	8.7	8.2	7.7	6.9
70	0.372	49.1	36.8	29.5	24.6	21.1	18.4	16.4	14.7	13.4	12.3	11.3	10.5	9.8	9.2	8.7	8.2	7.4
80	0.391	51.6	38.7	30.9	25.8	22.1	19.3	17.2	15.5	14.1	12.9	11.9	11.0	10.3	9.7	9.1	8.6	7.7
90	0.404	53.3	40.0	32.0	26.6	22.8	20.0	17.8	16.0	14.5	13.3	12.3	11.4	10.7	10.0	9.4	8.9	8.0
100	0.412	54.3	40.8	32.6	27.2	23.3	20.4	18.1	16.3	14.8	13.6	12.5	11.6	10.9	10.2	9.6	9.1	8.2

*All GPA table values are based on applying water into air at atmospheric pressure. Refer to **Disk Orifice Plate Guidelines (1st pg of Appendix C)** for conversion rates.
*The outlined sections in tables A & B represent application rates for a realistic speed and pressure range.
*Values within +/-5% of actual

Appendix C

Disk Orifice Rate Chart: 57

Note: All table values must be converted from GPA(water) to the specific solution GPA flow rate with equations listed on Disk Orifice Plate Guidelines (1st pg of Appendix C)

TABLE A

Press.	Flow	GPA (Water) at MPH based on 10" spacing (20" Rows)																
PSI	GPM	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20
20	0.283	56.0	42.0	33.6	28.0	24.0	21.0	18.7	16.8	15.3	14.0	12.9	12.0	11.2	10.5	9.9	9.3	8.4
30	0.346	68.5	51.4	41.1	34.3	29.4	25.7	22.8	20.6	18.7	17.1	15.8	14.7	13.7	12.8	12.1	11.4	10.3
40	0.400	79.2	59.4	47.5	39.6	33.9	29.7	26.4	23.8	21.6	19.8	18.3	17.0	15.8	14.9	14.0	13.2	11.9
50	0.447	88.5	66.4	53.1	44.3	37.9	33.2	29.5	26.6	24.1	22.1	20.4	19.0	17.7	16.6	15.6	14.8	13.3
60	0.490	97.0	72.8	58.2	48.5	41.6	36.4	32.3	29.1	26.5	24.3	22.4	20.8	19.4	18.2	17.1	16.2	14.6
70	0.522	103.4	77.5	62.0	51.7	44.3	38.8	34.5	31.0	28.2	25.8	23.9	22.2	20.7	19.4	18.2	17.2	15.5
80	0.549	108.8	81.6	65.3	54.4	46.6	40.8	36.3	32.6	29.7	27.2	25.1	23.3	21.8	20.4	19.2	18.1	16.3
90	0.570	112.9	84.7	67.7	56.4	48.4	42.3	37.6	33.9	30.8	28.2	26.0	24.2	22.6	21.2	19.9	18.8	16.9
100	0.584	115.6	86.7	69.4	57.8	49.5	43.3	38.5	34.7	31.5	28.9	26.7	24.8	23.1	21.7	20.4	19.3	17.3

TABLE B

Press.	Flow	GPA (Water) at MPH based on 15" spacing (30" Rows)																
PSI	GPM	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20
20	0.283	37.4	28.0	22.4	18.7	16.0	14.0	12.5	11.2	10.2	9.3	8.6	8.0	7.5	7.0	6.6	6.2	5.6
30	0.346	45.7	34.3	27.4	22.8	19.6	17.1	15.2	13.7	12.5	11.4	10.5	9.8	9.1	8.6	8.1	7.6	6.9
40	0.400	52.8	39.6	31.7	26.4	22.6	19.8	17.6	15.8	14.4	13.2	12.2	11.3	10.6	9.9	9.3	8.8	7.9
50	0.447	59.0	44.3	35.4	29.5	25.3	22.1	19.7	17.7	16.1	14.8	13.6	12.6	11.8	11.1	10.4	9.8	8.9
60	0.490	64.7	48.5	38.8	32.3	27.7	24.3	21.6	19.4	17.6	16.2	14.9	13.9	12.9	12.1	11.4	10.8	9.7
70	0.522	68.9	51.7	41.4	34.5	29.5	25.8	23.0	20.7	18.8	17.2	15.9	14.8	13.8	12.9	12.2	11.5	10.3
80	0.549	72.5	54.4	43.5	36.3	31.1	27.2	24.2	21.8	19.8	18.1	16.7	15.5	14.5	13.6	12.8	12.1	10.9
90	0.570	75.2	56.4	45.1	37.6	32.2	28.2	25.1	22.6	20.5	18.8	17.4	16.1	15.0	14.1	13.3	12.5	11.3
100	0.584	77.1	57.8	46.2	38.5	33.0	28.9	25.7	23.1	21.0	19.3	17.8	16.5	15.4	14.4	13.6	12.8	11.6

*All GPA table values are based on applying water into air at atmospheric pressure. Refer to **Disk Orifice Plate Guidelines (1st pg of Appendix C)** for conversion rates.
*The outlined sections in tables A & B represent application rates for a realistic speed and pressure range.
*Values within +/-5% of actual

Appendix C

Disk Orifice Rate Chart: 61

Note: All table values must be converted from GPA(water) to the specific solution GPA flow rate with equations listed on Disk Orifice Plate Guidelines (1st pg of Appendix C)

TABLE A

Press.	Flow	GPA (Water) at MPH based on 10" spacing (20" Rows)																
PSI	GPM	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20
20	0.330	65.3	49.0	39.2	32.7	28.0	24.5	21.8	19.6	17.8	16.3	15.1	14.0	13.1	12.3	11.5	10.9	9.8
30	0.404	80.0	60.0	48.0	40.0	34.3	30.0	26.7	24.0	21.8	20.0	18.5	17.1	16.0	15.0	14.1	13.3	12.0
40	0.466	92.3	69.2	55.4	46.1	39.5	34.6	30.8	27.7	25.2	23.1	21.3	19.8	18.5	17.3	16.3	15.4	13.8
50	0.521	103.2	77.4	61.9	51.6	44.2	38.7	34.4	30.9	28.1	25.8	23.8	22.1	20.6	19.3	18.2	17.2	15.5
60	0.571	113.1	84.8	67.8	56.5	48.5	42.4	37.7	33.9	30.8	28.3	26.1	24.2	22.6	21.2	20.0	18.8	17.0
70	0.613	121.3	91.0	72.8	60.7	52.0	45.5	40.4	36.4	33.1	30.3	28.0	26.0	24.3	22.7	21.4	20.2	18.2
80	0.658	130.3	97.7	78.2	65.1	55.8	48.9	43.4	39.1	35.5	32.6	30.1	27.9	26.1	24.4	23.0	21.7	19.5
90	0.701	138.8	104.1	83.3	69.4	59.5	52.0	46.3	41.6	37.8	34.7	32.0	29.7	27.8	26.0	24.5	23.1	20.8
100	0.741	146.8	110.1	88.1	73.4	62.9	55.0	48.9	44.0	40.0	36.7	33.9	31.4	29.4	27.5	25.9	24.5	22.0

TABLE B

Press.	Flow	GPA (Water) at MPH based on 15" spacing (30" Rows)																
PSI	GPM	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20
20	0.330	43.6	32.7	26.1	21.8	18.7	16.3	14.5	13.1	11.9	10.9	10.1	9.3	8.7	8.2	7.7	7.3	6.5
30	0.404	53.3	40.0	32.0	26.7	22.9	20.0	17.8	16.0	14.5	13.3	12.3	11.4	10.7	10.0	9.4	8.9	8.0
40	0.466	61.5	46.1	36.9	30.8	26.4	23.1	20.5	18.5	16.8	15.4	14.2	13.2	12.3	11.5	10.9	10.3	9.2
50	0.521	68.8	51.6	41.3	34.4	29.5	25.8	22.9	20.6	18.8	17.2	15.9	14.7	13.8	12.9	12.1	11.5	10.3
60	0.571	75.4	56.5	45.2	37.7	32.3	28.3	25.1	22.6	20.6	18.8	17.4	16.2	15.1	14.1	13.3	12.6	11.3
70	0.613	80.9	60.7	48.5	40.4	34.7	30.3	27.0	24.3	22.1	20.2	18.7	17.3	16.2	15.2	14.3	13.5	12.1
80	0.658	86.8	65.1	52.1	43.4	37.2	32.6	28.9	26.1	23.7	21.7	20.0	18.6	17.4	16.3	15.3	14.5	13.0
90	0.701	92.5	69.4	55.5	46.3	39.6	34.7	30.8	27.8	25.2	23.1	21.3	19.8	18.5	17.3	16.3	15.4	13.9
100	0.741	97.8	73.4	58.7	48.9	41.9	36.7	32.6	29.4	26.7	24.5	22.6	21.0	19.6	18.3	17.3	16.3	14.7

*All GPA table values are based on applying water into air at atmospheric pressure. Refer to **Disk Orifice Plate Guidelines (1st pg of Appendix C)** for conversion rates.
*The outlined sections in tables A & B represent application rates for a realistic speed and pressure range.
*Values within +/-5% of actual

Appendix C

Disk Orifice Rate Chart: 73

Note: All table values must be converted from GPA(water) to the specific solution GPA flow rate with equations listed on Disk Orifice Plate Guidelines (1st pg of Appendix C)

TABLE A

Press.	Flow	GPA (Water) at MPH based on 10" spacing (20" Rows)																
PSI	GPM	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20
20	0.467	92.5	69.3	55.5	46.2	39.6	34.7	30.8	27.7	25.2	23.1	21.3	19.8	18.5	17.3	16.3	15.4	13.9
30	0.572	113.3	84.9	68.0	56.6	48.5	42.5	37.8	34.0	30.9	28.3	26.1	24.3	22.7	21.2	20.0	18.9	17.0
40	0.660	130.7	98.0	78.4	65.3	56.0	49.0	43.6	39.2	35.6	32.7	30.2	28.0	26.1	24.5	23.1	21.8	19.6
50	0.738	146.1	109.6	87.7	73.1	62.6	54.8	48.7	43.8	39.9	36.5	33.7	31.3	29.2	27.4	25.8	24.4	21.9
60	0.808	160.0	120.0	96.0	80.0	68.6	60.0	53.3	48.0	43.6	40.0	36.9	34.3	32.0	30.0	28.2	26.7	24.0
70	0.852	168.8	126.6	101.3	84.4	72.3	63.3	56.3	50.6	46.0	42.2	38.9	36.2	33.8	31.6	29.8	28.1	25.3
80	0.901	178.4	133.8	107.0	89.2	76.5	66.9	59.5	53.5	48.7	44.6	41.2	38.2	35.7	33.4	31.5	29.7	26.8
90	0.941	186.3	139.7	111.8	93.1	79.8	69.9	62.1	55.9	50.8	46.6	43.0	39.9	37.3	34.9	32.9	31.0	27.9
100	0.972	192.4	144.3	115.5	96.2	82.5	72.2	64.1	57.7	52.5	48.1	44.4	41.2	38.5	36.1	34.0	32.1	28.9

TABLE B

Press.	Flow	GPA (Water) at MPH based on 15" spacing (30" Rows)																
PSI	GPM	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20
20	0.467	61.6	46.2	37.0	30.8	26.4	23.1	20.5	18.5	16.8	15.4	14.2	13.2	12.3	11.6	10.9	10.3	9.2
30	0.572	75.5	56.6	45.3	37.8	32.4	28.3	25.2	22.7	20.6	18.9	17.4	16.2	15.1	14.2	13.3	12.6	11.3
40	0.660	87.1	65.3	52.3	43.6	37.3	32.7	29.0	26.1	23.8	21.8	20.1	18.7	17.4	16.3	15.4	14.5	13.1
50	0.738	97.4	73.1	58.4	48.7	41.7	36.5	32.5	29.2	26.6	24.4	22.5	20.9	19.5	18.3	17.2	16.2	14.6
60	0.808	106.7	80.0	64.0	53.3	45.7	40.0	35.6	32.0	29.1	26.7	24.6	22.9	21.3	20.0	18.8	17.8	16.0
70	0.852	112.5	84.4	67.5	56.3	48.2	42.2	37.5	33.8	30.7	28.1	26.0	24.1	22.5	21.1	19.9	18.8	16.9
80	0.901	118.9	89.2	71.4	59.5	51.0	44.6	39.6	35.7	32.4	29.7	27.4	25.5	23.8	22.3	21.0	19.8	17.8
90	0.941	124.2	93.1	74.5	62.1	53.2	46.6	41.4	37.3	33.9	31.0	28.7	26.6	24.8	23.3	21.9	20.7	18.6
100	0.972	128.3	96.2	77.0	64.1	55.0	48.1	42.8	38.5	35.0	32.1	29.6	27.5	25.7	24.1	22.6	21.4	19.2

*All GPA table values are based on applying water into air at atmospheric pressure. Refer to **Disk Orifice Plate Guidelines (1st pg of Appendix C)** for conversion rates.
*The outlined sections in tables A & B represent application rates for a realistic speed and pressure range.
*Values within +/-5% of actual

Appendix C

Disk Orifice Rate Chart: 78

Note: All table values must be converted from GPA(water) to the specific solution GPA flow rate with equations listed on Disk Orifice Plate Guidelines (1st pg of Appendix C)

TABLE A

Press.	Flow	GPA (Water) at MPH based on 10" spacing (20" Rows)																
PSI	GPM	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20
20	0.544	107.7	80.8	64.6	53.9	46.2	40.4	35.9	32.3	29.4	26.9	24.9	23.1	21.5	20.2	19.0	18.0	16.2
30	0.667	132.1	99.0	79.2	66.0	56.6	49.5	44.0	39.6	36.0	33.0	30.5	28.3	26.4	24.8	23.3	22.0	19.8
40	0.770	152.5	114.3	91.5	76.2	65.3	57.2	50.8	45.7	41.6	38.1	35.2	32.7	30.5	28.6	26.9	25.4	22.9
50	0.861	170.5	127.9	102.3	85.2	73.1	63.9	56.8	51.1	46.5	42.6	39.3	36.5	34.1	32.0	30.1	28.4	25.6
60	0.943	186.7	140.0	112.0	93.4	80.0	70.0	62.2	56.0	50.9	46.7	43.1	40.0	37.3	35.0	32.9	31.1	28.0
70	0.999	197.9	148.4	118.7	98.9	84.8	74.2	66.0	59.4	54.0	49.5	45.7	42.4	39.6	37.1	34.9	33.0	29.7
80	1.061	210.0	157.5	126.0	105.0	90.0	78.8	70.0	63.0	57.3	52.5	48.5	45.0	42.0	39.4	37.1	35.0	31.5
90	1.113	220.4	165.3	132.3	110.2	94.5	82.7	73.5	66.1	60.1	55.1	50.9	47.2	44.1	41.3	38.9	36.7	33.1
100	1.157	229.0	171.8	137.4	114.5	98.2	85.9	76.3	68.7	62.5	57.3	52.9	49.1	45.8	42.9	40.4	38.2	34.4

TABLE B

Press.	Flow	GPA (Water) at MPH based on 15" spacing (30" Rows)																
PSI	GPM	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20
20	0.544	71.8	53.9	43.1	35.9	30.8	26.9	23.9	21.5	19.6	18.0	16.6	15.4	14.4	13.5	12.7	12.0	10.8
30	0.667	88.0	66.0	52.8	44.0	37.7	33.0	29.3	26.4	24.0	22.0	20.3	18.9	17.6	16.5	15.5	14.7	13.2
40	0.770	101.6	76.2	61.0	50.8	43.6	38.1	33.9	30.5	27.7	25.4	23.5	21.8	20.3	19.1	17.9	16.9	15.2
50	0.861	113.7	85.2	68.2	56.8	48.7	42.6	37.9	34.1	31.0	28.4	26.2	24.4	22.7	21.3	20.1	18.9	17.0
60	0.943	124.5	93.4	74.7	62.2	53.3	46.7	41.5	37.3	33.9	31.1	28.7	26.7	24.9	23.3	22.0	20.7	18.7
70	0.999	131.9	98.9	79.1	66.0	56.5	49.5	44.0	39.6	36.0	33.0	30.4	28.3	26.4	24.7	23.3	22.0	19.8
80	1.061	140.0	105.0	84.0	70.0	60.0	52.5	46.7	42.0	38.2	35.0	32.3	30.0	28.0	26.3	24.7	23.3	21.0
90	1.113	147.0	110.2	88.2	73.5	63.0	55.1	49.0	44.1	40.1	36.7	33.9	31.5	29.4	27.6	25.9	24.5	22.0
100	1.157	152.7	114.5	91.6	76.3	65.4	57.3	50.9	45.8	41.6	38.2	35.2	32.7	30.5	28.6	26.9	25.4	22.9

*All GPA table values are based on applying water into air at atmospheric pressure. Refer to **Disk Orifice Plate Guidelines (1st pg of Appendix C)** for conversion rates.
*The outlined sections in tables A & B represent application rates for a realistic speed and pressure range.
*Values within +/-5% of actual

Appendix C

Disk Orifice Rate Chart: 91

Note: All table values must be converted from GPA(water) to the specific solution GPA flow rate with equations listed on Disk Orifice Plate Guidelines (1st pg of Appendix C)

TABLE A

Press.	Flow	GPA (Water) at MPH based on 10" spacing (20" Rows)																
PSI	GPM	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20
20	0.739	146.3	109.7	87.8	73.2	62.7	54.9	48.8	43.9	39.9	36.6	33.8	31.4	29.3	27.4	25.8	24.4	21.9
30	0.905	179.2	134.4	107.5	89.6	76.8	67.2	59.7	53.8	48.9	44.8	41.4	38.4	35.8	33.6	31.6	29.9	26.9
40	1.050	207.9	155.9	124.7	104.0	89.1	78.0	69.3	62.4	56.7	52.0	48.0	44.6	41.6	39.0	36.7	34.7	31.2
50	1.170	231.7	173.7	139.0	115.8	99.3	86.9	77.2	69.5	63.2	57.9	53.5	49.6	46.3	43.4	40.9	38.6	34.7
60	1.280	253.4	190.1	152.1	126.7	108.6	95.0	84.5	76.0	69.1	63.4	58.5	54.3	50.7	47.5	44.7	42.2	38.0
70	1.356	268.4	201.3	161.0	134.2	115.0	100.6	89.5	80.5	73.2	67.1	61.9	57.5	53.7	50.3	47.4	44.7	40.3
80	1.442	285.6	214.2	171.3	142.8	122.4	107.1	95.2	85.7	77.9	71.4	65.9	61.2	57.1	53.5	50.4	47.6	42.8
90	1.518	300.6	225.4	180.3	150.3	128.8	112.7	100.2	90.2	82.0	75.1	69.4	64.4	60.1	56.4	53.0	50.1	45.1
100	1.583	313.5	235.1	188.1	156.7	134.3	117.5	104.5	94.0	85.5	78.4	72.3	67.2	62.7	58.8	55.3	52.2	47.0

TABLE B

Press.	Flow	GPA (Water) at MPH based on 15" spacing (30" Rows)																
PSI	GPM	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20
20	0.739	97.5	73.2	58.5	48.8	41.8	36.6	32.5	29.3	26.6	24.4	22.5	20.9	19.5	18.3	17.2	16.3	14.6
30	0.905	119.5	89.6	71.7	59.7	51.2	44.8	39.8	35.8	32.6	29.9	27.6	25.6	23.9	22.4	21.1	19.9	17.9
40	1.050	138.6	104.0	83.2	69.3	59.4	52.0	46.2	41.6	37.8	34.7	32.0	29.7	27.7	26.0	24.5	23.1	20.8
50	1.170	154.4	115.8	92.7	77.2	66.2	57.9	51.5	46.3	42.1	38.6	35.6	33.1	30.9	29.0	27.3	25.7	23.2
60	1.280	169.0	126.7	101.4	84.5	72.4	63.4	56.3	50.7	46.1	42.2	39.0	36.2	33.8	31.7	29.8	28.2	25.3
70	1.356	178.9	134.2	107.4	89.5	76.7	67.1	59.6	53.7	48.8	44.7	41.3	38.3	35.8	33.5	31.6	29.8	26.8
80	1.442	190.4	142.8	114.2	95.2	81.6	71.4	63.5	57.1	51.9	47.6	43.9	40.8	38.1	35.7	33.6	31.7	28.6
90	1.518	200.4	150.3	120.2	100.2	85.9	75.1	66.8	60.1	54.7	50.1	46.2	42.9	40.1	37.6	35.4	33.4	30.1
100	1.583	209.0	156.7	125.4	104.5	89.6	78.4	69.7	62.7	57.0	52.2	48.2	44.8	41.8	39.2	36.9	34.8	31.3

*All GPA table values are based on applying water into air at atmospheric pressure. Refer to **Disk Orifice Plate Guidelines (1st pg of Appendix C)** for conversion rates.
*The outlined sections in tables A & B represent application rates for a realistic speed and pressure range.
*Values within +/-5% of actual